

How to Improve Engineering Recruitment and Retention

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Abstract

This paper describes the author's experience in engineering recruitment and retention. As for a workshop, the intention is to generate discussions on how to effectively recruit and retain engineering students. The topics include how to engage and recruit high school students, how to effectively retain the first-year students, how to better use scholarships as a means for student recruitment. The challenges in graduate student recruitment that many universities are facing are also among the topics for discussion.

Keywords

Recruitment, Retention, First-year Students, Student Advising, Student Success.

Introduction

The United States accounts for less than 8% of new engineers globally each year. As of 2000, approximately 9% of high school students considering engineering as their future major in college. More specifically, only 4.5% of college students major in engineering, as compared to 12% in Europe and 40% in Asia. Furthermore, 50% of current engineers in US will retire by 2017. Clearly, shortage of engineers in US has become an emergent issue, which leads to a challenge in how to effectively recruit and retain engineering students. Recruitment and retention should not be treated as two separate issues. Without a sound strategy for improving retention, the recruitment efforts may be in vain. In comparison, improving retention is, indeed a more complex task, which has to do with student advising, student success, tutoring and first-year engineering program.

Engaging and Recruiting High School Students

It is well known that high school students, in general, have very limited exposure to engineering. Therefore, engaging the students earlier while they are in 9th or 10th grade is preferred. Although some educators have suggested to engage the students even earlier while they are in 7th or 8th grade, it may be a little too early because those students have yet learned science.

To help the high school students learn what engineering is about, we created a mechanism called *Fenn Academy*. AS of today, our college has affiliated with 65 regional high schools. With these

schools, we invite their students to our college to do some interesting engineering projects. We also regularly visit those schools to give them seminars and interact with the students and their teachers.

Once the students get familiar with our campus and college, many of them tend to choose the College as the college of their choice. Furthermore, to help attract better students, we fundraise local corporations for scholarships.

Retaining the First-Year Students

Engineering students generally spend their first three semesters to take mathematics, physics and chemistry. Because of that, most first-year engineering students feel so distant and disengaged from engineering. As a result, some of them ended up dropping out of engineering. We have worked closely with the University in terms of student success initiatives, using Starfish software to interact with the students, issuing midterm grades and implemented multiple terms registration. In particular, we are the only college that requires every student to meet with their faculty advisors for course selection, career path planning and others. As a result, the engineering retention rate is at 80%, the highest among all colleges on campus.

Using Scholarships to Attract Better Students

We have successfully fundraised scholarships from local industry. While the majority of scholarships have designated use, some are free to use. Streamlining all sorts of scholarships from various units on campus can maximize the effectiveness. Early admission with scholarships certainly helps attract better students. To make it more effective, we have moved up the scholarship offering schedule from March to February.

Effect of Co-op/Internship Program on Student Recruitment

For the students, co-op or internship program may not be seen as the most important factor of consideration. But, for their parents, affordability is certainly most important. In many cases, the parents are most influential on their kids to select the college that has a strong co-op/internship programs. We have observed that strong co-op/internship programs actually help recruit students.

Challenges in Graduate Student Recruitment

When the job market is good, most domestic undergraduate students choose to work right after graduation. Thus, the best way to recruit them to the graduate school is by means of "4+1" program that shortens the period of graduate study by a year.

However, recruiting international graduate students is very different. In this regard, the out-of-state-tuition may play a deciding role in selecting their school. Any sort of graduate assistantship even if it is partial or tuition waiver will help recruit the students and retain them as well.

References

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